0.a. Goal

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

0.b. Target

Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

0.c. Indicator

Indicator 2.a.1: The agriculture orientation index for government expenditures

0.e. Metadata update

Last updated: March 2020

0.g. International organisations(s) responsible for global monitoring

Institutional information

Organization(s):

Food and Agriculture Organization of the United Nations (FAO)

2.a. Definition and concepts

Concepts and definitions

Definition:

The Agriculture Orientation Index (AOI) for Government Expenditures is defined as the Agriculture share of Government Expenditure, divided by the Agriculture value added share of GDP, where Agriculture refers to the agriculture, forestry, fishing and hunting sector. The measure is a currency-free index, calculated as the ratio of these two shares. National governments are requested to compile Government Expenditures according to the Government Finance Statistics (GFS) and the Classification of the Functions of Government (COFOG), and Agriculture value added share of GDP according to the System of National Accounts (SNA).

Concepts:

Agriculture refers to the agriculture, forestry, fishing and hunting sector, or Division A of ISIC Rev 4 (equal to Division A+B of ISIC Rev 3.2).

Government Expenditure are all expense and acquisition of non-financial assets associated with supporting a particular sector, as defined in the Government Finance Statistics Manual (GFSM) 2014 developed by the International Monetary Fund (IMF).

Government Expenditure are classified according to the Classification of the Functions of Government (COFOG), a classification developed by the Organisation for Economic Co-operation and Development (OECD) and published by the United Nations Statistical Division (UNSD).

Agriculture value-added and GDP are based on the System of National Accounts (SNA).

3.a. Data sources

Data sources

Description:

Data on government expenditures is collected from countries using an annual questionnaire administered by FAO. Since countries typically compile government expenditure data based on their financial systems, and is administrative data covering the entirely of government expenditures, particularly at the central government level, there is no sampling issue and no possibility of sampling error. For some countries that do not report such data to FAO, data may be obtained from the IMF GFS database (which includes similar data but covering more sectors, and with less disaggregation of COFOG 042) or from official national governmental websites.

Data on agriculture value-added and GDP are based on the system of national accounts, which is an analytical framework that compiles national data from a mix of survey, census and administrative (e.g. tax) sources. This data is obtained from the UN Statistics Division, which provides national accounts estimates for 220 countries and territories.

3.b. Data collection method

Collection process:

Data for the denominator are annually collected from countries using the FAO questionnaire on Government Expenditure on Agriculture (GEA), developed in collaboration with the IMF. Data from countries may be supplemented, for missing countries, with data collected by the IMF, or published on official national governmental websites. The official counterpart(s) at country level are, depending on the country, from the national statistics office, the ministry of finance (or other central planning agency), or the ministry of agriculture. Validation and consultation were conducted through various FAO commissions and committees, including its two agricultural statistics commissions in Africa and the Asia and Pacific, its Committee on Agriculture and Livestock Statistics in Latin America and the Caribbean, and its Committee on Agriculture.

3.c. Data collection calendar

Calendar

Data collection:

The 2019 data collection of Government Expenditure on Agriculture will start in May 2020.. Due to time required to collect, compile and publish national data, very few countries will be able to provide 2019 reference year data for the FAO Spring 2020 data collection cycle.

3.d. Data release calendar

Data release:

As this data is largely compiled annually, the next release for this indicator is planned for November 2020, covering data up to reference year 2019 (for the countries for which data collection, compilation, release is more timely).

3.e. Data providers

Data providers

Ministry of Finance, Central Planning Agency, National Statistics Office, and/or Ministry of Agriculture

3.f. Data compilers

Data compilers

Food and Agriculture Organization of the UN (FAO)

4.a. Rationale

Rationale:

An Agriculture Orientation Index (AOI) greater than 1 reflects a higher orientation towards the agriculture sector, which receives a higher share of government spending relative to its contribution to economic value-added. An AOI less than 1 reflects a lower orientation to agriculture, while an AOI equal to 1 reflects neutrality in a government’s orientation to the agriculture sector.

Government spending in agriculture includes spending on sector policies and programs; soil improvement and soil degradation control; irrigation and reservoirs for agricultural use; animal health management, livestock research and training in animal husbandry; marine/freshwater biological research; afforestation and other forestry projects; etc.

Spending in these agricultural activities helps to increase sector efficiency, productivity and income growth by increasing physical or human capital and /or reducing inter-temporal budget constraints.

However, the private sector typically under-invests in these activities due to the presence of market failure (e.g. the public good nature of research and development; the positive externalities from improved soil and water conditions; lack of access to competitive credit due to asymmetric information between producers and financial institutions, etc.). Similarly, the high risk faced by agricultural producers, particular smallholders unable to hedge against risk, often requires government intervention in terms of income redistribution to support smallholders in distress following crop failures and livestock loss from pests, droughts, floods, infrastructure failure, or severe price changes.

Government spending in agriculture is essential to address these market failures and the periodic need for income redistribution. This leads to several potential indicators for the SDGs, which include: a) the level of Government Expenditure on Agriculture (GEA); b) the Agriculture share of Government Expenditure, and c) the AOI for Government Expenditures.

An indicator that measures GEA levels fails to take into account the size of an economy. If two countries, A and B, have the same level of GEA, and the same agriculture contribution to GDP, but country A's economy is 10 times that of country B, setting the same target levels for GEA fails to take economic size into account.

An indicator that measures the Agriculture share of Government Expenditure fails to take into account the relative contributions of the agricultural sector to a country's GDP. Consider two countries with the same economic size, C and D, where agriculture contributes 2 per cent to C's GDP, and 10 per cent to country D's GDP. If total Government Expenditures were equal in both countries, C would experience greater relative investment in Agriculture than D. If total Government Expenditures differed, the result could be magnified or diluted.

The AOI index takes into account a country's economic size, Agriculture's contribution to GDP, and the total amount of Government Expenditure. As such, it allows for the setting of a universal and achievable target. Nonetheless, it is useful to interpret the AOI in combination with its numerator and denominator separately: the Agriculture share of Government Expenditure and the Agriculture value-added Share of GDP

4.b. Comment and limitations

Comments and limitations:

Since the numerator of this data is based on administrative sources, there is no confidence interval or standard error associated with government expenditure data. For the denominator, national accounts data typically do not provide any standard error or confidence interval information.

The key limitation with this indicator is that it takes into account only central government expenditure. To the extent that some countries may have heavier intervention in agriculture by sub-national governments, this will not be taken into account.

4.c. Method of computation

Methodology

Computation method:

AOI = Agriculture Share of Government Expenditures/Agriculture Value Added Share of GDP

Where:

Agriculture Share of Government Expenditure =

(Central Government Expenditure on Agriculture/Total Central Government Expenditure) * 100

Agriculture refers to COFOG category 042 (agriculture, forestry, fishing and hunting); and

Agriculture Value Added Share of GDP =

(Agriculture Value Added/GDP)* 100

Agriculture refers to the Division A of ISIC Rev 4 (agriculture, forestry, fishing and hunting), equal to Division A+B of ISIC Rev 3.2.

4.f. Treatment of missing values (i) at country level and (ii) at regional level

Treatment of missing values:

- ***At country level:***

The missing values of 2018 government expenditure in agriculture were imputed from the ones of 2017 data submitted from countries.

- ***At regional and global levels:***

Regional and global aggregates of 2018 are based on mixed data of normal data from countries for which data are available and imputed data for countries for which data are not available. For the other period from 2001 to 2017, the regional and global aggregates are based on those of countries for which data are available. This may result in users interpreting these aggregates as pertaining to all countries in the region, which is the equivalent of treating countries with missing data as if they were the same as those for which data are available.

4.g. Regional aggregations

Regional aggregates:

Global and regional estimates are compiled by first separately summing across countries the four individual components of the index: government expenditure on agriculture, total government expenditure, agriculture value-added, and GDP. These are added only for those countries in a region (or globally) for which all components are available, and the index then calculated for this larger region.

5. Data availability and disaggregation

Data availability

Description:

Data are available for about 100 countries on a regular basis.

Time series:

From 2001 to 2018

Disaggregation:

Since this indicator is based on national accounts data and total central government expenditures, it does not allow for disaggregation by demographic characteristics or geographic location.

6. Comparability/deviation from international standards

Sources of discrepancies:

Since FAO does not alter government expenditure data reported by countries, and uses the national accounts estimates published by the UN Statistics Division (where some national data may be imputed), there should be no difference between data reported by FAO and national figures.

7. References and Documentation

References

URL:

www.fao.org

References:

FAOSTAT domain of Government Expenditure on Agriculture http://www.fao.org/faostat/en/#data/IG

IMF Government Finance Statistics Manual 2014
https://www.imf.org/external/np/sta/gfsm/